



One Sensor. Infinite Possibilities.

Key Features

- **All-in-one design** – integrated sensor and controller eliminates external hardware, cables, and complexity
- **Zero recalibration** – sensor adapts automatically to any material (clear, opaque, metallic, nonwoven, mesh)
- **High resolution** – 0.0635 mm (0.0025 in) hardware resolution across the entire sensing width
- **Material-agnostic detection** – patented fiber-optic technology based on light scattering and spatial filtering
- **IP67 protection** – sealed aluminum housing withstands harsh industrial environments (IP68 available on request)
- **Native industrial Ethernet** – EtherNet/IP, PROFINET, EtherCAT, Modbus/TCP, CC-Link IE Field Basic
- **Vacuum compatible** – operates reliably in vacuum chamber applications

Benefits

- **Stop paying for separate controllers** – all-in-one design eliminates external hardware and reduces total system cost
- **Eliminate integration complexity** – just power and one Ethernet cable replaces multi-component wiring
- **End unplanned downtime** from cable failures and connector issues between sensors and controllers
- **Stop losing hours** to sensor recalibration when switching between materials
- **Prevent hidden scrap** from temperature-related inaccuracies that plague ultrasonic sensors

Specifications

| | | | |
|----------------------------|---|----------------------------|----------------------------------|
| Sensor Type | Fiber Optic (diffuse-reflective) | Sensing Range | 384 mm (15.12 in) |
| Hardware Resolution | 0.0635 mm (0.0025 in) | Firmware Resolution | Up to 0.015875 mm |
| Repeatability | >99.9% | Linearity Error | <0.25% |
| Response Time | 20 ms standard (1 ms special) | Camera Rate | 25 Hz - 1000 Hz |
| Working Distance | 6-25 mm (0.25-1.0 in) optimal | Max Edges | 128 |
| Light Source | IR (880 nm), UV (385 nm), or White | Camera Type | CMOS line scan camera |
| Input Voltage | 20-30 VDC | Current Draw | 150-1500 mA |
| Power Connector | M8 4-pin male A-Coded | Network Connector | M8 4-pin female A-Coded |
| Protocols | EtherNet/IP, PROFINET, EtherCAT, Modbus/TCP, CC-Link IE Field Basic | | |
| Operating Temp | -10°C to 65°C (14°F to 150°F) | Protection Class | IP67 (IP68 available on request) |
| Housing Material | Aluminum alloy (powder coated) | Vacuum Compatible | Yes |
| Controller Required | No (built-in) | Interface | Industrial Ethernet / APP / PLC |

Applications

- Web guiding (edge, center, and contrast guiding)
- Edge position measurement
- Multiple edge position measurement (up to 128 edges)
- Center position measurement
- Line/contrast position measurement
- Width measurement and coating width measurement
- Multiple strip width measurement
- Thread/string counting
- Flag detection and splice detection
- Tear detection and simple inspection

Compatibility

SUPPORTED LINE SPEEDS

1000+ fpm

SUPPORTED MATERIAL TYPES

Nonwoven, Porous/Perforated

SUPPORTED WEB WIDTHS

Medium (12"-48"), Wide (48"-72")

Available Configurations

| Part Number | Configuration |
|-------------|---|
| 7-020005 | Mounting Bracket for 1" or 25 mm Extrusion for WPS, ODC and 1DC Sensors |
| 7-020006 | Mounting Bracket for 1.5" or 40 mm Extrusion for WPS, ODC and 1DC Sensors |
| 8-000012 | 1DC 384-IR EP |
| 8-010012 | 1DC 384-IR PR |
| 8-020012 | 1DC 384-IR MB |
| 8-060012 | 1DC 384-IR EC |

Supporting Documentation

Manuals (3)

- 1DC Series: Product Data Sheet
- Register Map for 1DC Series Roll-2-Roll® Sensor (v 4.3a+)
- Sensor Installation Recommendations: Inspection Applications

2D Drawings (3)

- 1DC 384-xx QD
- New Mounting Brackets for WPS, ODC and 1DC sensors - 1.5 in or 40 mm extrusion
- New Mounting Brackets for WPS, ODC and 1DC sensors - 1in or 25 mm extrusion

3D Models (3)

- 1DC 384
- Mounting Bracket for 1.5in or 40mm Extrusion for WPS, ODC and 1DC Sensors
- Mounting Bracket for 1in or 25mm Extrusion for WPS, ODC and 1DC Sensors

Support Files (2)

- EtherNet/IP EDS File for Roll-2-Roll® Communication Module
- Rockwell/AB Add-on Instructions for 1DC Series of Roll-2-Roll® Sensor



Scan for datasheets, 3D models & full documentation

<https://r2r.tech/products/sensors/1dc-384>

Ready to Get Started?

Contact our experts to discuss how this product fits your application.

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